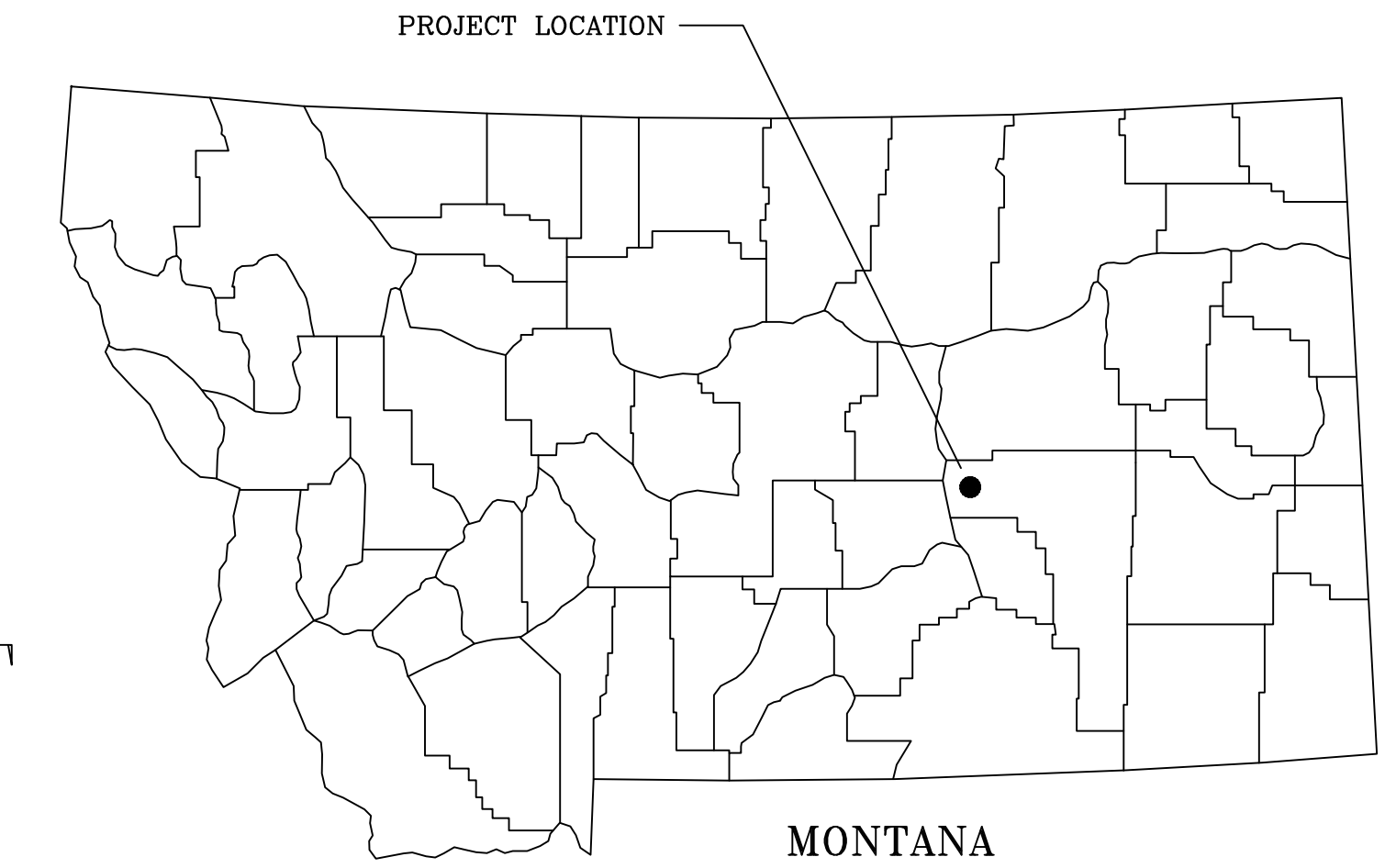




DUCKS UNLIMITED
PROJECT
RATTLESNAKE CREEK REPAIR
SECTION 33, TOWNSHIP 11 NORTH, RANGE 33 EAST
ROSEBUD COUNTY, MONTANA
IN COOPERATION WITH
MONTANA FISH, WILDLIFE & PARKS

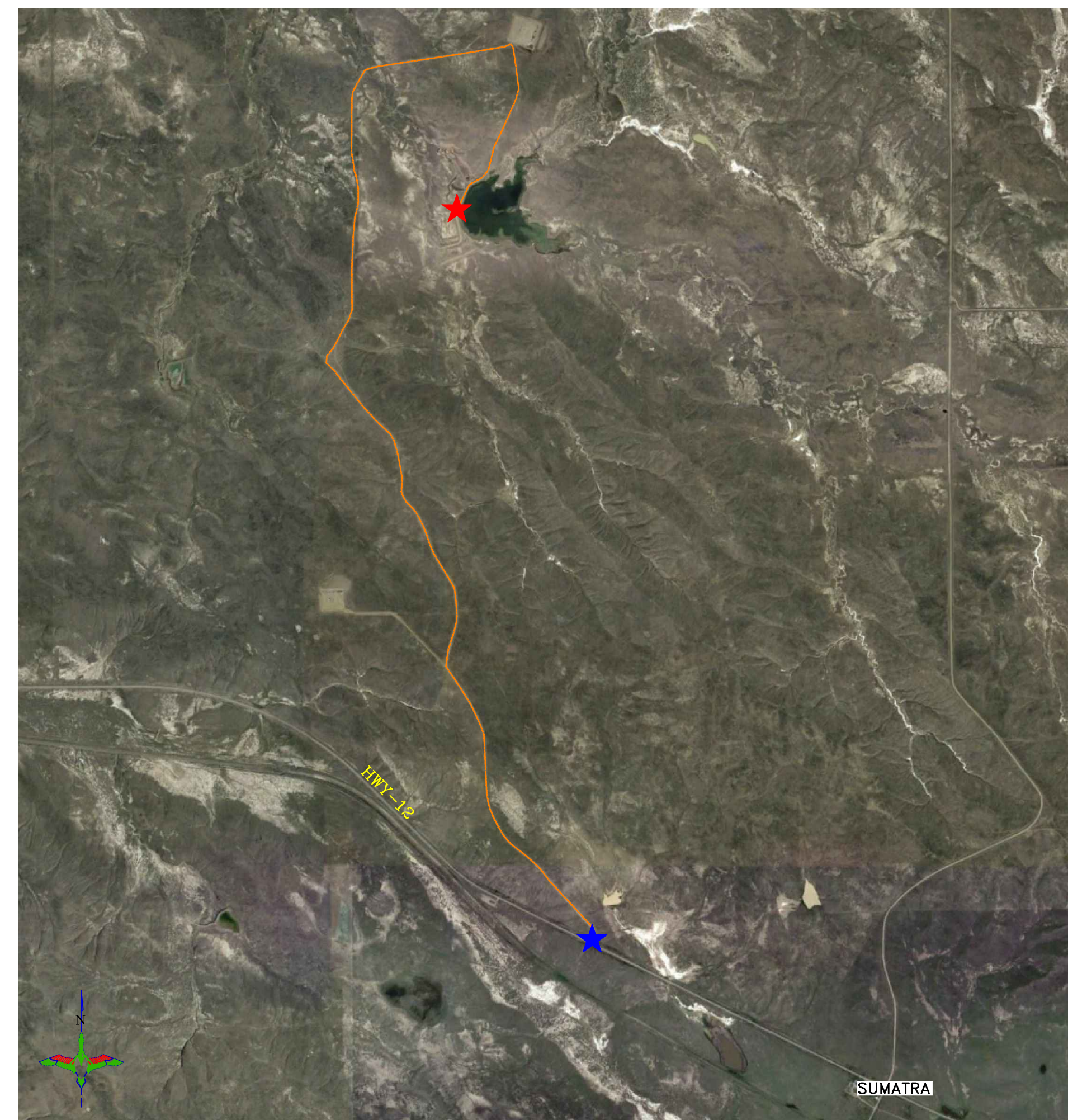


SPECIFICATIONS

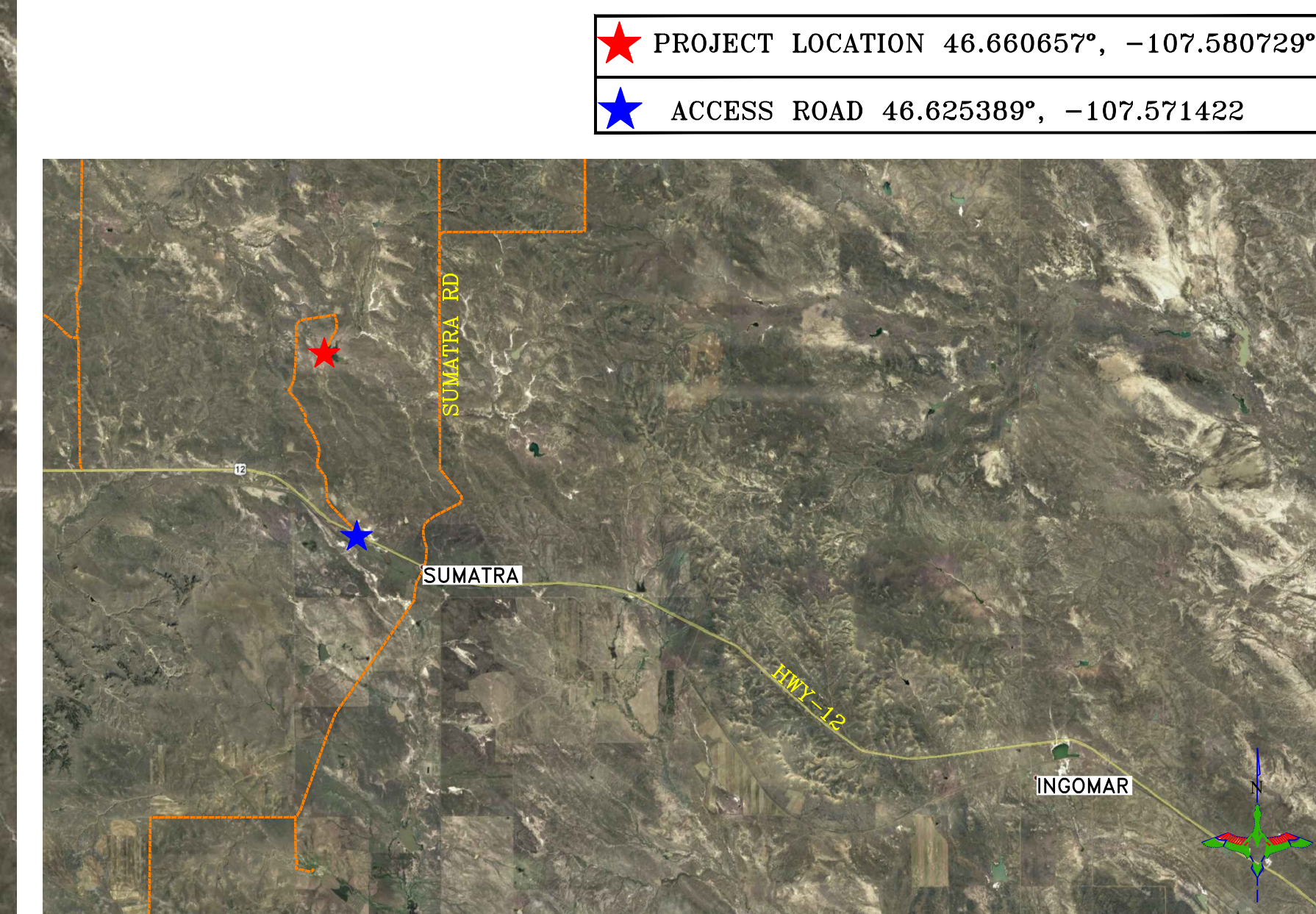
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|-----|---------------------------------------------|
| 101 | GENERAL CONDITIONS |
| 201 | MOBILIZATION |
| 202 | SITE PREPARATION |
| 203 | EXCAVATION |
| 204 | EMBANKMENT CONSTRUCTION |
| 205 | WATER |
| 301 | WATER CONTROL STRUCTURES |
| 302 | STRUCTURE AND CULVERT APPURTENANCES |
| 303 | CULVERT AND PIPE INSTALLATION |
| 304 | CAST-IN-PLACE REINFORCED CONCRETE |
| 305 | RIPRAP, REVETMENT & AGGREGATE PLACEMENT |
| 306 | TOE DRAIN INSTALLATION |
| 311 | REMOVAL OF EXISTING CULVERTS AND STRUCTURES |
| 401 | SOIL EROSION AND POLLUTION CONTROL |

INDEX

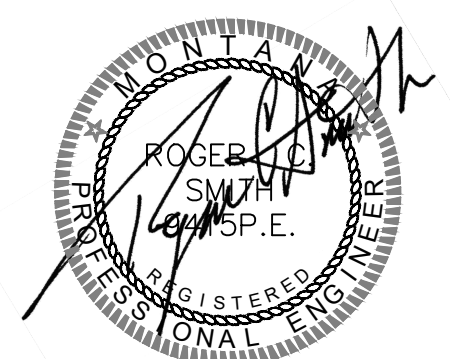
1. SPECIFICATIONS, PLAN INDEX & PROJECT MAPS
2. NOTES & QUANTITIES
3. EXISTING CONDITIONS OVERALL SITE
4. WATER CONTROL STRUCTURE EXCAVATION
5. EMBANKMENT CONSTRUCTION
6. WATER CONTROL STRUCTURE INSTALLATION
7. WATER CONTROL STRUCTURE DETAILS



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE



IF THESE PLANS ARE NOT PLOTTED AND/OR REPRODUCED AT THE ORIGINAL SIZE OF 24"x 36" ANY SCALE REFERENCED HEREIN SHOULD BE DISREGARDED AND THE PLANS SHOULD BE CONSIDERED "NOT TO SCALE."

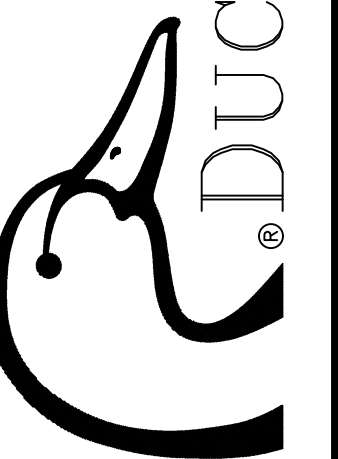
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IT IS THE CONTRACTOR'S RESPONSIBILITY TO
HAVE ALL UTILITIES LOCATED BEFORE
CONSTRUCTION BEGINS. FOR ROSEBUD COUNTY,
MONTANA CALL 811 FOR LOCATE REQUEST.

ROGER SMITH, P.E.
DUCKS UNLIMITED
2525 RIVER ROAD
BISMARCK, ND 58503
(701) 355-3500

SHEET 1						
PROJECT NO.: US-MT-116-2						
DATE: 9/12/2018						
BOOK NO. -						
SURVEYED BY: BRK						
DRAWN BY: CMH						
DESIGNED BY: RCS						
CAD FILE: MT-116-2.DWG						
No. of Revisions	Revised By	Revised Date	Revised Description	Revised By	Revised Date	Revised Description
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Global Leader in Wetlands & Wildlife Conservation
GREAT PLAINS REGIONAL OFFICE
BISMARCK, NORTH DAKOTA (701) 355-3500

RAILLENSNAKE CREEK
EMBANKMENT & WCS REPAIR
ROSEBUD COUNTY, MONTANA

ESTIMATED QUANTITIES				
NOTE	SPEC.#	ITEM	UNIT	QUANTITY
1	201	MOBILIZATION	L.S	1
2	202	SITE PREPARATION	L.S	1
3	204	EMBANKMENT	C.Y.–P	3,200
4	205	WATER	MGAL	20
5	301	WATER CONTROL STRUCTURE		
		PRECAST 72"Ø RISER	L.S.	1
6	302	STRUCTURE & CULVERT APPURTENANCES		
		GRETA GRATE OR APPROVED EQUAL	L.S.	1
	303	CULVERT SUPPLY AND INSTALLATION		
		42"Ø RCP, GASKETED, CLASS III AND FLARED END SECTION	L.F.	96
7	304	CAST-IN-PLACE REINFORCED CONCRETE		
		2,500 PSI MIX	C.Y.–P	9
		4,000 PSI MIX	C.Y.–P	1
8	305	RIPRAP, REVETMENT, AND AGGREGATE PLACEMENT		
		DU CLASS II RIPRAP	TON	164
		¾"–1½" CLEAR ROCK BEDDING	TON	3
		CHIMNEY DRAIN	TON	75
		DIAPHRAGM FILTER	TON	91
9	311	REMOVAL OF EXISTING CULVERTS AND STRUCTURES		
10	203	EXCAVATION		INC
11	401	SOIL EROSION AND POLLUTION CONTROL		LS

CONSTRUCTION NOTES

- BID ITEM FOR MOBILIZATION SHALL INCLUDE THE SUPPLY OF ALL LABOR, MATERIAL AND EQUIPMENT TO TRANSPORT ALL NEEDED LABOR, MATERIAL AND EQUIPMENT TO AND FROM A PROJECT SITE TO SUCCESSFULLY COMPLETE THAT PROJECT AS SHOWN ON THE PLANS OR DESCRIBED BY THE ENGINEER.
- SITE PREPARATION BID ITEM SHALL INCLUDE STRIPPING BENEATH EMBANKMENT FOOTPRINT, "FILL-IN" AREA, AND BORROW/SPOIL AREAS. TOPSOIL SHALL BE STOCKPILED AND REPLACED OVER COMPACTED EMBANKMENT, BORROW/SPOIL AREA AND CHANNEL SIDE SLOPES. BID ITEM SHALL INCLUDE LEVELING AND DRAGGING OR DISKING IN PREPARATION OF SEEDING. SEE ADDITIONAL NOTES SHEETS 4–6.
- BID ITEM FOR EMBANKMENT SHALL INCLUDE ALL WORK REQUIRED TO RECONSTRUCT EMBANKMENT WITH BERM. MATERIAL SHALL BE PLACED AND COMPACTED AS DESCRIBED IN EMBANKMENT SPECIFICATION 204. THE USE OF A VIBRATORY SHEEP'S FOOT MAY BE REQUIRED ONSITE. PAYMENT IS BASED ON CUBIC YARD PLAN. THERE WILL BE NO ADJUSTMENT MADE FOR INCREASE OR DECREASE TO QUANTITY. SEE ADDITIONAL NOTES SHEETS 5–7.
- THE BID ITEM FOR WATER INCLUDES THE SUPPLY, DELIVERY AND APPLICATION OF ANY WATER REQUIRED IN THE EMBANKMENT CONSTRUCTION PROCESS. PAYMENT WILL BE MADE ON THE ACTUAL AMOUNT OF WATER REQUIRED BY THE ENGINEER.
- BID ITEM FOR PRECAST 72"Ø RISER SHALL INCLUDE THE INSTALLATION OF THE RISER SECTIONS, MONOLITHIC BASE, CIRCULAR KNOCK OUT FOR 42"Ø RCP, WATER-TIGHT JOINTS WITH MASTIC, AND ANY OTHER ITEMS PERTAINING TO THE WATER CONTROL STRUCTURE.
- BID ITEM FOR GRETA GATE SHALL INCLUDE THE INSTALLATION OF THE GALVANIZED TRASH RACK.
- BID ITEM FOR CULVERT SUPPLY AND INSTALLATION IS FOR THE SUPPLY AND INSTALLATION OF THE 42" GASKETED RCP.
- BID ITEMS FOR CAST-IN-PLACE CONCRETE ARE SEPARATED BETWEEN MATERIALS. 4,000 PSI CONCRETE SHALL BE USED FOR CONCRETE COLLAR AND FLOOR IN PRECAST RISER. 2,500 PSI CONCRETE "FLOW-ABLE" FILL SHALL BE USED FOR RCP BEDDING. EACH ITEM SHALL INCLUDE MATERIALS AND INSTALLATION OF SUCH.
- BID ITEM FOR RIP-RAP DU CLASS II IS FOR THE INSTALLATION OF ROCK RIP-RAP AS SHOWN ON THE PLANS. NON-WOVEN FILTER FABRIC IS REQUIRED BENEATH ALL ROCK RIP-RAP AND SHALL BE SECURED TO SLOPES AND BOTTOM USING PINS IF REQUIRED BY THE ENGINEER AS NOTED IN SPECIFICATION 305. EXCAVATION REQUIRED FOR ROCK RIP-RAP AND PLACEMENT SHALL ALSO E PAID FOR UNDER THIS LINE ITEM.
- BID ITEM FOR "REMOVAL OF EXISTING CULVERTS AND STRUCTURES" SHALL INCLUDE ALL WORK REQUIRED TO REMOVE AND DISPOSE OF EXISTING CULVERT AND WATER CONTROL STRUCTURE.
- BID ITEM FOR SIOL EROSION AND POLLUTION CONTROL IS FOR THE INSTALLATION OF STRAW PALES ACROSS THE NATURAL CHANNEL BELOW THE REQUIRED EXCAVATION AND STRUCTURE INSTALLATION IT IS UP TO THE CONTRACTOR TO DETERMINE THE EXACT QUANTITY OF STRAW BALES REQUIRED.

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Revision No.	Sheet No.	Revisions	Date	By
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CAD FILE: MT-116-2.DWG				
DESIGNED BY: RLS				
DRAWN BY: CMH				
SURVEYED BY: BRK				
BOOK NO. –				
DATE: 9/12/2018				
PROJECT NO.: US-MT-116-2				
SHEET 2				



BORROW/SPOIL AREA
DEVELOP IN A MANNER IN
WHICH AREAS WITHIN 25' OF
D/S TOE ARE AVOIDED AND
WITHIN 50' OF D/S
CHANNEL

STRUCTURE ℓ = 2+12.42 &
EMBANKMENT ℓ = 2+17.17

EXISTING EMBANKMENT

WASHED OUT STRUCTURE LOCATION
TO BE REMOVED AND DISPOSED OF

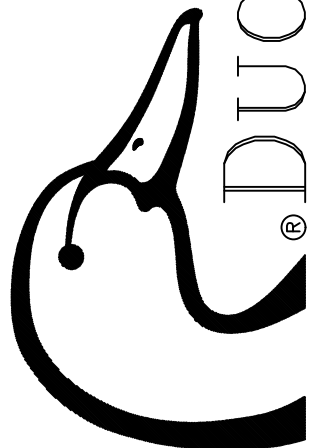
EXISTING SPILLWAY

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BISMARCK, NORTH DAKOTA (701) 355-3500



DUCKS UNLIMITED

RATTLESNAKE CREEK
WCS & EMBANKMENT REPAIR
ROSEBUD COUNTY, MONTANA

Revision No.	Sheet No.	Revisions	Date	By
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CAD FILE:
MT-116-2.DWG

DESIGNED BY: RLS

DRAWN BY: CMH

SURVEYED BY: BRK

BOOK NO. -

DATE:
9/12/2018

PROJECT NO.:
US-MT-116-2

SHEET 3

STRUCTURE @

EXISTING GROUND

2:1

2:1

STRUCTURE @ EXCAVATION

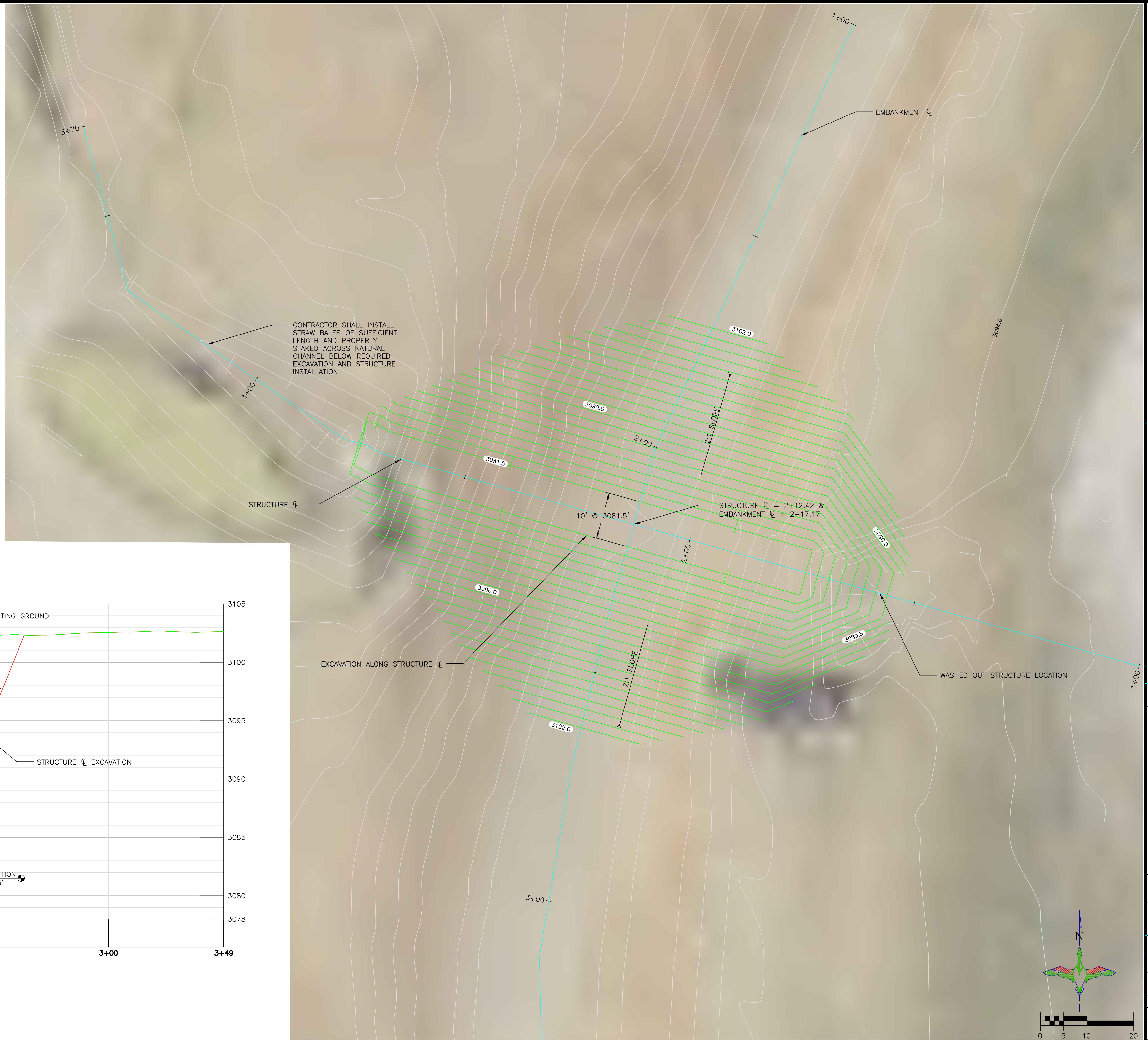
BTM EXCAVATION
ELEV. 3081.5'

10'

1+00 2+00 3+00 3+49

Embankment @

SCALE: 1"=20'-0" HORIZONTAL
1"=4'-0" VERTICAL





CONTRACTOR SHALL INSTALL
STRAW BALES OF SUFFICIENT
LENGTH AND PROPERLY
STAKED ACROSS NATURAL
CHANNEL BELOW REQUIRED
EXCAVATION AND STRUCTURE
INSTALLATION

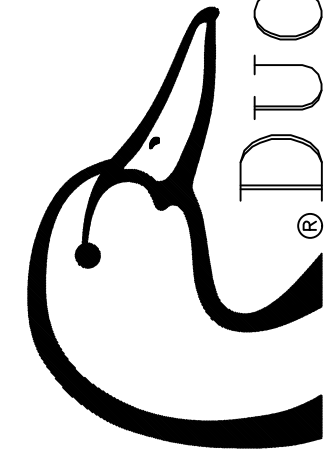
STRUCTURE ϕ = 2+12.42 &
EMBANKMENT ϕ = 2+17.17

STRUCTURE ϕ

TYPICAL EMBANKMENT SECTION
SCALE: 1"= 10'

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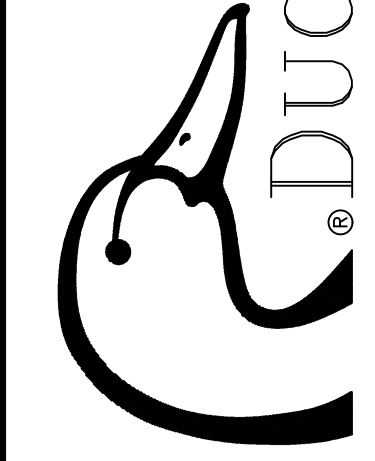
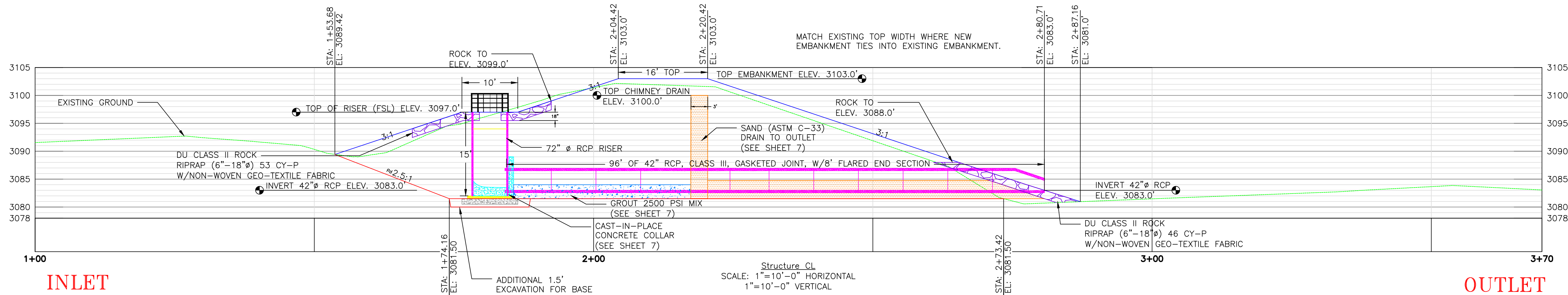
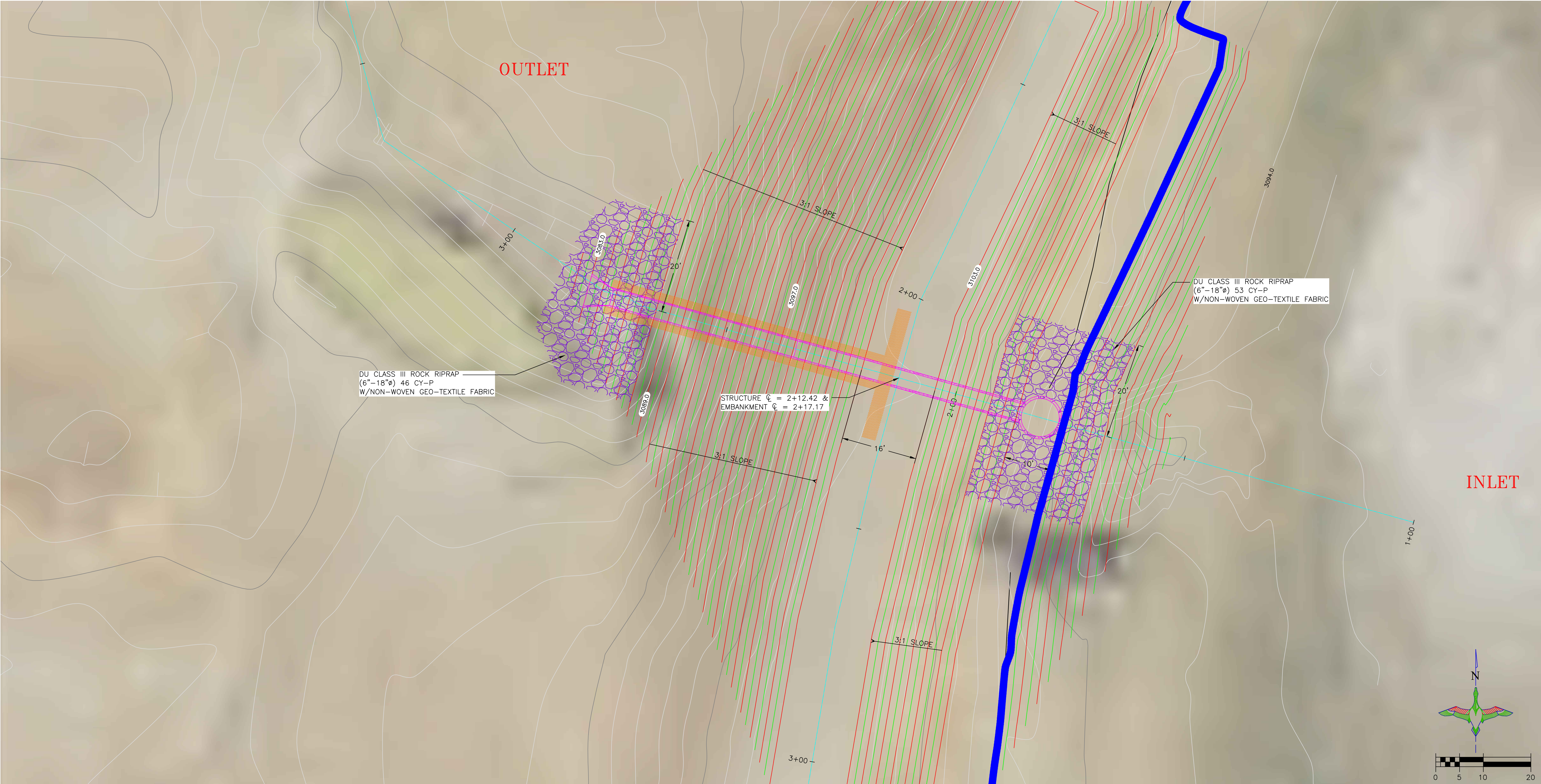


RATTLESNAKE CREEK
WCS & EMBANKMENT REPAIR
ROSEBUD COUNTY, MONTANA

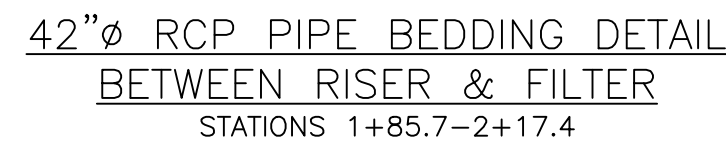
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CAD FILE:
MT-116-2.DWG
DESIGNED BY: RLS
DRAWN BY: CMH
SURVEYED BY: BRK
BOOK NO. -

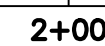
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PROJECT NO.:
US-MT-116-2



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9	x	x	x
10	x	x	x



PAYMENT FOR PRECAST 72"Ø RISER SHALL BE PAID FOR BASED ON THE CONTRACTORS UNIT BID PRICE FOR "WATER CONTROL STRUCTURE INSTALLATION."



Structure CL
SCALE: 1" = 5'-0" HORIZONTAL
1" = 5'-0" VERTICAL

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PROJECT NO.: US-MT-116-2				
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